EXISTING CONDITIONS

The South Magnolia Basin lies along the shore of Puget Sound, northwest of Elliott Bay and southeast of Discovery Park (see Figure 3.1). The South Magnolia Basin is located on the southwestern slope of the Magnolia neighborhood of Seattle, Washington. Puget Sound and Elliott Bay form the western and southern boundaries of the basin. The north boundary varies from Discovery Park and W Emerson Street on the northwest, to W Dravus Street on the northeast. The basin's eastern boundary roughly follows 28th Avenue W. An additional area outside the natural drainage basin was considered for facility locations in alternatives development. The area east of the drainage basin bounded by Smith Cove on the east and south, the Magnolia Bridge on the north, and the Magnolia basin on the west is also covered in this chapter.

3.1 HUMAN ENVIRONMENT

3.1.1 Land Use

The South Magnolia Basin is almost completely developed, predominantly with single-family residential homes. One of Seattle's largest park properties, Magnolia Park, is located in the southeast corner of the basin, along with Smith Cove Park, and the Port of Seattle's Smith Cove Marina Park.

Table 3.1 lists land uses in the basin and Figure 3.2 South Magnolia Land Use shows the current zoning.

Table 3.1 Land Use in the South Magnolia Basin

Land Use Type	Area (acres)[1]	Percent of Total
Residential	515	69%
Commercial/Government/Institutional	115	15%
Industrial	1	0%
Parks	78	10%
Vacant	35	5%
Total	744	100%

Notes
1. Source: King County GIS

Figure 3.1
SOUTH MAGNOLIA BASIN VICINITY MAP

King County
Department of Natural Resources and Parks
Wastewater Treatment Division

Figure 3-1.ai

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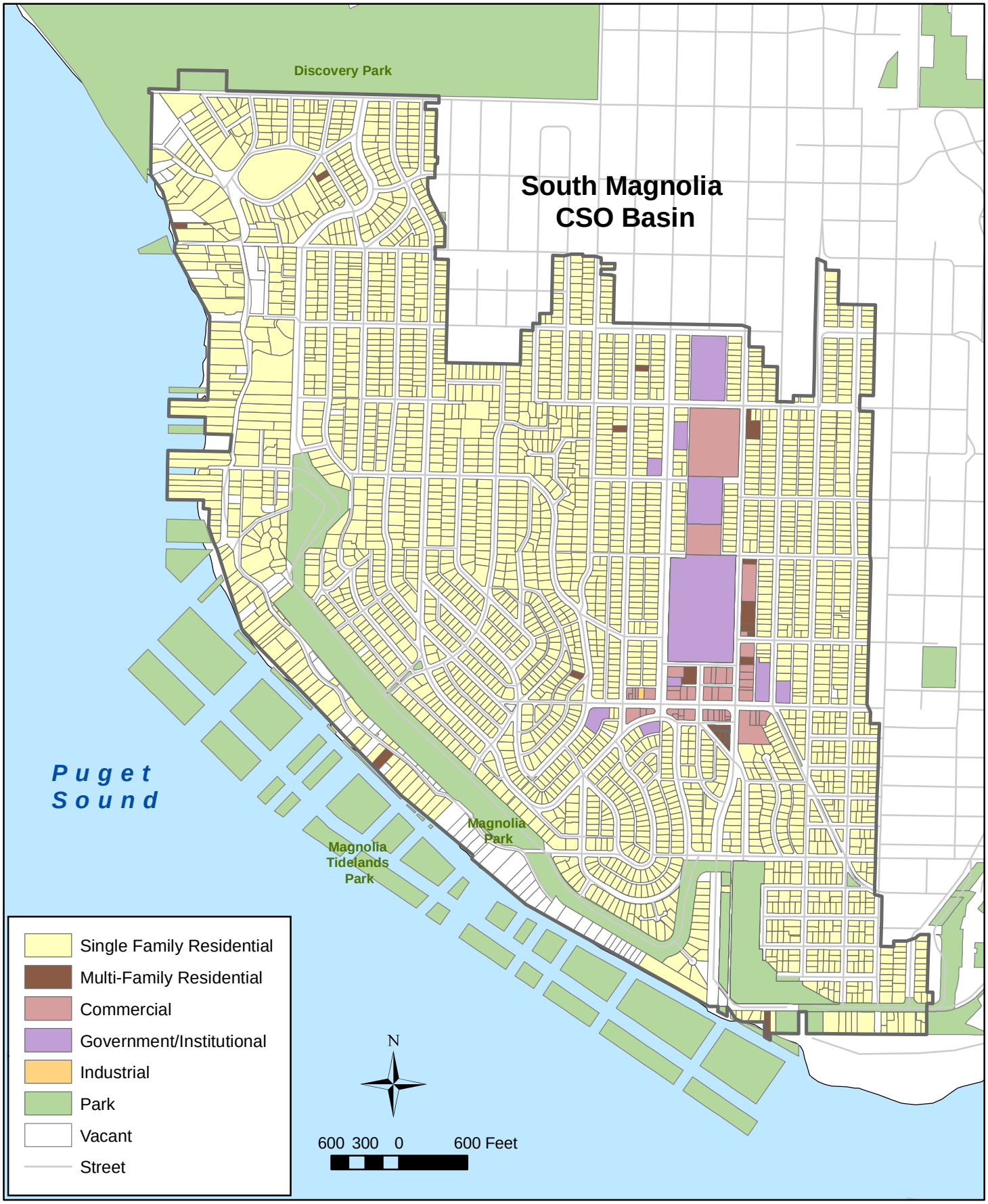

Figure 3.2
SOUTH MAGNOLIA BASIN ZONING MAP

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Wastewater Treatment Division

Figure 3-2.ai

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3.1.2 Wastewater System

3.1.2.1 Local Collection System

The wastewater collection system in the South Magnolia Basin (see figures 3.3 and 3.4) is owned and maintained by Seattle Public Utilities (SPU) and serves primarily single-family and multi-family residential and commercial customers. The systems consist of local 8- to 42-inch-diameter gravity sewer pipes and one Seattle Public Utility-operated local pump station (SPU PS77). The pump station is the connection point for two sub basins (Figure 3.1, 3.4), SM02 and SM03, and a portion of the shoreline. It discharges to the MAGCSO structure. The remainder of the basin's sewerage is tributary by gravity to the MAGCSO.

In the South Magnolia Basin, a majority of the collection system has been partially separated: municipal separated stormwater sewer systems (MS4) serve streets, alleyways, and some private properties, but a significant portion of rooftops and private property impervious areas are still connected to the combined sewer system (CSS). Approximately 2,400 residential properties and 80 non-residential properties are connected to the CSS in the South Magnolia Basin.

3.1.2.2 CSO Control Structures and Outfalls

The CSO control structure for the South Magnolia Basin (MAGCSO) includes an overflow weir in a buried control structure. If flow exceeds the capacity of the South Magnolia Trunk Sewer, 4.3 mgd, the water elevation in the structure rises. Once the water elevation exceeds elevation 130 (METRO datum,) the water overflows a weir and excess flows are discharged to Puget Sound through a 36-inch diameter CSO outfall.

Figure 3.4 South Magnolia Trunk Sewer shows the CSO and regional conveyance facilities in the South Magnolia Basin.

3.1.2.3 Flow and Loads

The SMAGCSO averages 19 CSO events per year based on historical information. The total annual volume of discharge from these events averages 20 million gallons (MG) per year over the long term. In 2009, the total volume was 4.77 MG.

3.1.3 Public Health

CSO's are a public health concern since they carry pollutants, primarily in the form of untreated sewage and stormwater, into water bodies. These pose a threat to aquatic life and the natural environment. CSO's also pose a threat to human health through potential contact with water or the consumption of fish/shellfish harvested from areas of recent CSO discharge. It is through the regulation of CSO's that these threats can be reduced and controlled.

3.1.4 Cultural Resources

A preliminary review of potential cultural, archaeological, and historic resources within the South Magnolia Basin determined that several cultural, archaeological, and/or historic

Figure 3.3
SOUTH MAGNOLIA BASIN WASTEWATER COLLECTION SYSTEM

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Figure 3-3.ai

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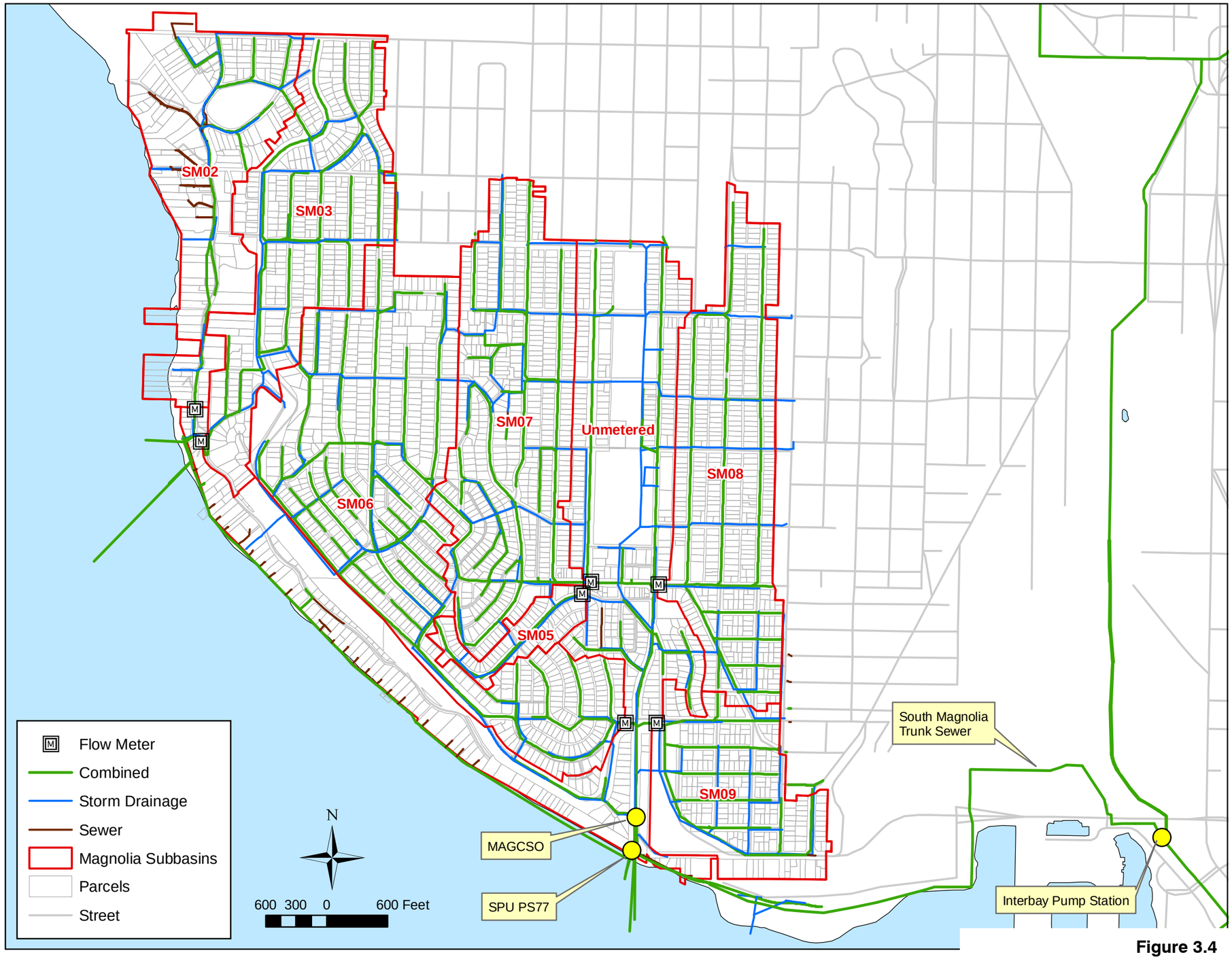

Figure 3.4
SOUTH MAGNOLIA BASIN TRUNK SEWER SYSTEM

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Wastewater Treatment Division

FIGURE 3-4.ai

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resources are located in the broader South Magnolia Basin. One area, located at the base of the bluff in the southeast portion of the basin, near 23rd Avenue W, has a high potential for containing archaeological resources. The Admiral's House, located on the bluff west of 23rd Avenue W is a historic structure, although construction will not likely affect this house. There is also a former ammunition bunker near the shore of Puget Sound, on the southern part of the site east of 23rd Avenue W; another site unlikely to be affected by construction.

A creek, known as Wolf Creek, previously flowed in ravine near the bottom of 32nd Avenue W. The creek has been filled and paved. The Wolf Creek ravine area has a low probability of containing archaeological resources.

3.2 PHYSICAL ENVIRONMENT

3.2.1 Land

3.2.1.1 Soils

Soil conditions in the South Magnolia Basin are the result of nonglacial and glacial processes during the Pleistocene, post-glacial geological processes, and human modification of the ground surface. The ridge on the eastern end of the South Magnolia Basin is underlain by Vashon Till and Vashon Advance Outwash deposited during the last glaciation in the Puget Lowland. Locally, these very dense soils are overlain by a relatively thin layer of recessional outwash and weathered topsoil zones. Based upon boring logs obtained for this area, this relatively thin layer is loose to medium dense and is typically 0 to 2 feet thick; however, locally, it may be 5 to 10 feet thick and may have as much as 25 feet of fill material placed over it. Near SW South Magnolia Street and 29th Avenue SW, post-glacial depression deposits consist of a mixture of soft peat and loose to medium dense silt and sand. Both the advance and recessional outwash deposits are relatively pervious, whereas the Vashon Till is relatively impervious. Permeability of the post-glacial depression deposits is highly variable.

In the lower, western part of the South Magnolia Basin, the surficial deposit is primarily recessional outwash sand and gravel. This loose to medium dense soil covers glacial clay and till deposits from the early and late Pleistocene. Holocene beach deposits dominate the shoreline area. All of the steep slope areas in the basin are covered with colluvium to depths of 3 to 10 or more feet. This deposit is the result of past landslide and erosional events on the slopes. In addition, colluvium is present at the toe of the existing steep slopes throughout the basin. In the vicinity of Smith Cove, east of the Magnolia Basin, the natural soils are covered with fill that is 10 to 20 feet thick.

Appendix A is a preliminary geological description and geotechnical characteristics evaluation for the South Magnolia basin.

3.2.1.2 Topography, Steep Slopes and Landslides

A topographic map of the South Magnolia Basin is shown in Figure 3.5 South Magnolia Basin Topography. The land rises in a bluff from the Puget Sound/Elliott Bay shoreline, with steep slopes and landslide areas forming a band parallel to the shoreline. Ground surface

Figure 3.5
SOUTH MAGNOLIA BASIN TOPOGRAPHY

Figure 3-5.ai

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elevations in the South Magnolia Basin range from roughly 400 feet mean sea level (MSL) in the area near Discovery Park to MSL near the South Magnolia CSO control structure. Many residences are built close to the top-of-slope around the perimeter of this ravine system. Two landslides are reported in the Seattle Landslide database on the northern edge of the ravine system, to the south of SW South Magnolia Street. As shown in Figures 3.6 and 3.7, steep slopes are concentrated along the bluffs adjacent to Puget Sound and are also present throughout the basin.

3.2.1.3 Soil or Groundwater Contamination

In general, there are few areas in the basins that are known to contain soil or groundwater contamination. These are typically associated with industrial areas and commercial land uses along major arterials. The Washington Department of Ecology (Ecology) maintains databases of contaminated site locations. Figures 3.6 and 3.7 depict the sites that have confirmed or suspected contamination or have leaking underground storage tanks according to the Ecology databases.

3.2.1.4 Liquefaction

Areas of potential liquefaction within the South Magnolia Basin are depicted on Figures 3.6 and 3.7. The largest liquefaction prone area is in the southeast portion of the basin, in the Interbay area.

3.2.2 Surface Water

In the South Magnolia Basin there is one small stream that flows from the western edge of the basin to Puget Sound. The South Magnolia Basin critical areas map (Figure 3.6) shows that most of this surface stream has been piped near the shoreline.

3.2.3 Rainfall

Average yearly rainfall in Seattle is between 36 and 37 inches. Heaviest rainfall occurs in the winter months, with November, December, and January averaging 5 to 6 inches per month. June, July, and August each average 1 inch per month.

3.2.4 Air

The Puget Sound region is a unique part of the country. No other region in the United States at this latitude has weather that is as moderate, with mild temperatures and few serious storms. Puget Sound weather is largely a result of maritime influences and diverse topography. The jet stream typically supplies the area with a steady supply of cool, fresh air off the ocean. This marine flow not only contributes to the mild climate, but also mixes the air, which helps keep pollution from building up.

Air quality within King County and the City of Seattle is monitored and regulated by the Puget Sound Clean Air Agency. According to data published in 2007 by the Clean Air Agency (the most recent published data), the air quality in King County was good 78% of the time and moderate 21% of the time.

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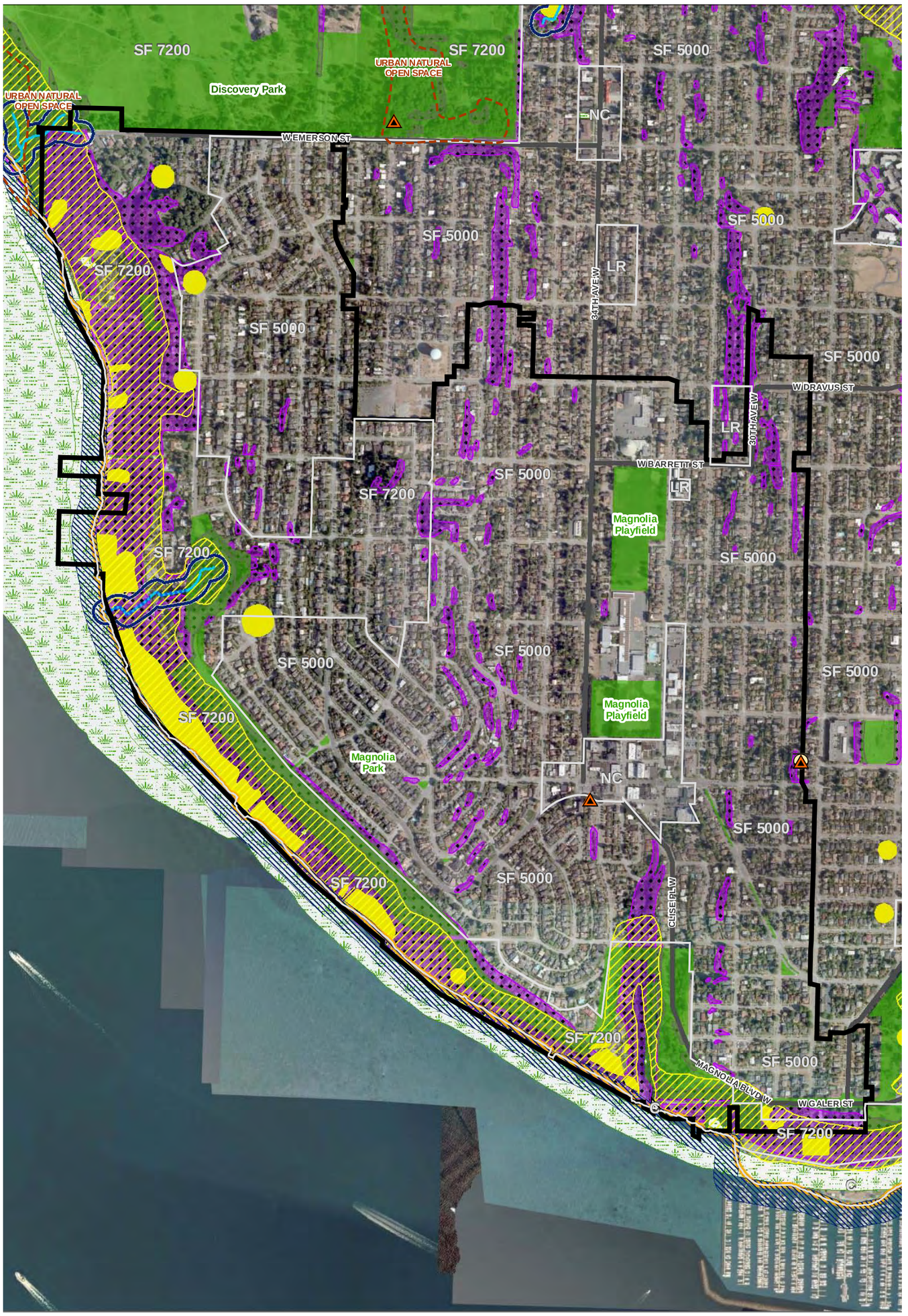

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Figure 3-6.ai

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Figure 3.6
SOUTH MAGNOLIA BASIN CRITICAL AREAS WEST

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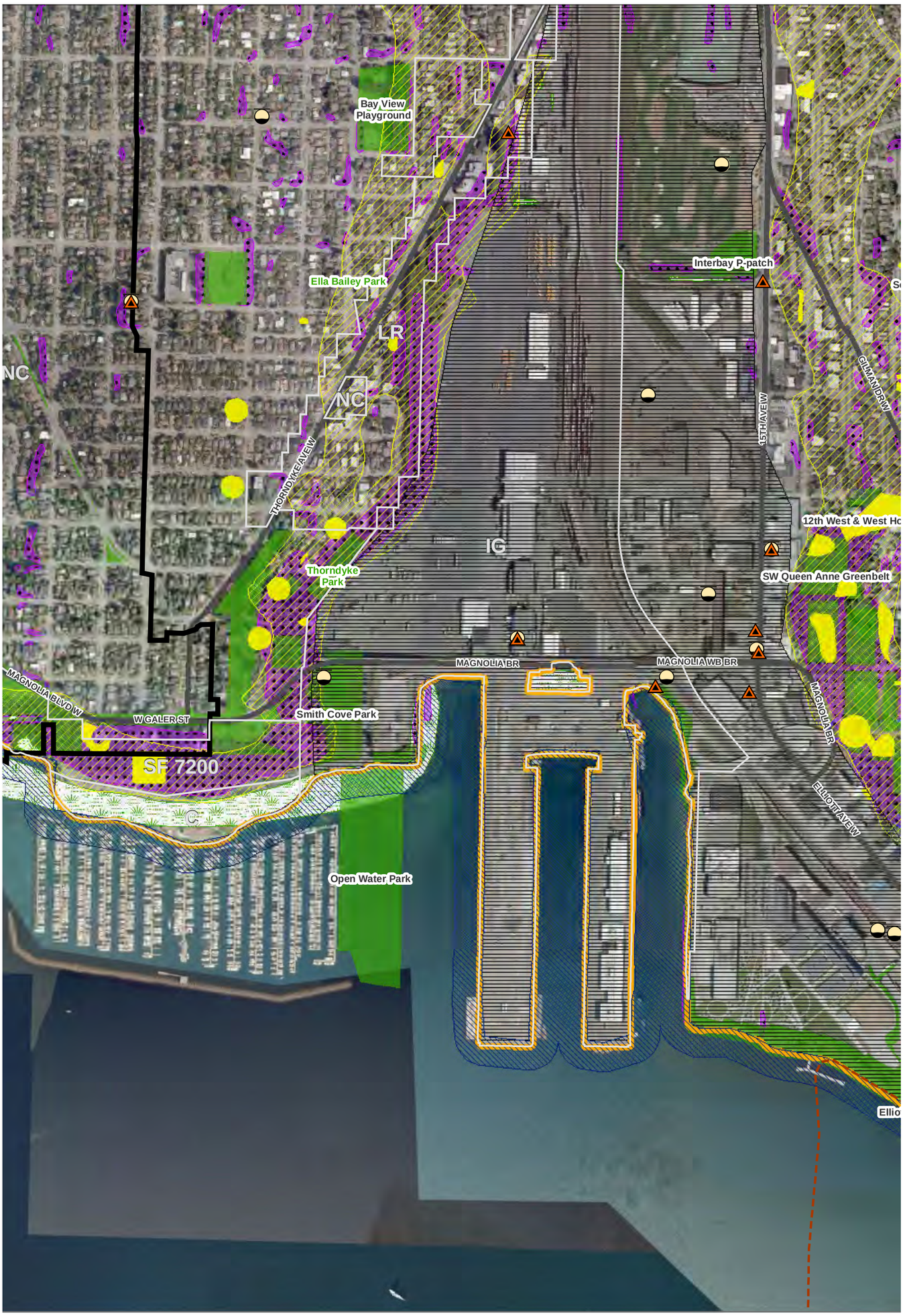

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Figure 3-7.ai

Figure 3.7
SOUTH MAGNOLIA BASIN CRITICAL AREAS EAST

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3.2.5 Sensitive Areas

3.2.5.1 Wetlands and Streams

Wetlands and streams within the South Magnolia Basin are shown on Figures 3.6 and 3.7. Mapped areas include the shoreline adjacent to Puget Sound and an unnamed stream that drains into Puget Sound from the western shore of the eastern portion of the basin. The historic Wolf Creek that is not reflected on current maps appears to have originally been located under 32nd Avenue W near the County's CSO control structure.

3.2.5.2 Shorelines

The Puget Sound shoreline lies to the south of the South Magnolia Basin. Land use along the bluffs adjacent to the shoreline is primarily residential. A commercial area exists at the marina. An industrial area that includes the proposed project site lies in the shoreline east of Magnolia Bluff along 23rd Avenue W.

3.2.5.3 Floodplains

The City of Seattle has mapped flood prone areas within the basin (refer to Figures 3.6 and 3.7). This area generally corresponds to the shoreline of Puget Sound.

3.3 ENDANGERED/THREATENED SPECIES AND HABITATS

There are no Priority Habitats and Species (PHS) as mapped by the Washington Department of Fish and Wildlife, in the South Magnolia Basin. The nearest mapped habitat is located north of the basin in Discovery Park. Puget Sound contains numerous threatened and endangered species, including Chinook salmon, bull trout, steelhead, canary rockfish, yelloweye rockfish, bocaccio rockfish, green sturgeon, orca whale, Stellar sea lion, and marbled murrelet.

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